

# MARINE REVIEW.

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No. 3.

## James J. Hill of Great Northern Fame.

James J. Hill of the Great Northern Railway has been prominently connected with the development of the northwest, and within the past few years his connection with lake interests at the head of Lake Superior has made his name familiar in all parts of the lakes. The portrait printed here is reproduced from a publication recently sent out from the city of Superior, and is not as good a likeness of Mr. Hill as the REVIEW would be pleased to present to its readers. Just now attention is directed to Mr. Hill and his operations on the lakes by the announcement that he is about to build a line of passenger steamers, to be run between Buffalo and the head of Lake Superior in connection with the freight line known as the Northern Steamship Company. In referring to these boats, Mr. John F. Pankhurst of the Globe Iron Works Company, Cleveland, who returned from St. Paul a few days ago said:

"The Great Northern Company will very probably build two boats at present and more may follow. Mr. Hill wants the finest boats that can be built. He does not want them followed in a few years by something better than he has secured. He wants them 360 feet long and capable of a speed of 20 miles an hour. To produce such a boat, suited to the St. Mary's Falls canal draft of little more than 14 feet, is by no means an easy task. The light draft would, of course, limit the diameter of wheel to about 12 feet in a twin screw boat. In this the lake builders will be at a great disadvantage. Atlantic liners like the City of Paris and the City of New York have 25-foot wheels and they are fully submerged. If the boats are built according to the ideas now entertained by Mr. Hill, a full year will be taken up in their construction after the plans have all been prepared."

There is little doubt that the Great Northern company is also planning for steamship lines on the Pacific coast and in the foreign trade. Capt. Murch of Cleveland who looked after the construction of the Hill freight boats now in operation on the lakes, is about to make a tour of all Atlantic coast shipyards, and it is understood that a part of his mission is to look up a few steamers that may be purchased for ocean service.

## Furnaces Nearer the Ore Fields.

John Birkinbine, an authority on iron matters, said at a recent meeting of mining engineers: "The rapid development of the western portion of our country, particularly that which is tributary to or can be easily reached from the great lakes, may divert from Chicago and vicinity part of the future iron production to points nearer the ore fields, and yet within convenient reach of cheap transportation for the fuel. Whether this fuel will be transported in its raw state and coked at the blast furnaces, or whether it will be conveyed as coke, is a problem in process of solution, but I confess to feeling a gratification that the enterprise which I had the privilege of suggesting five years

ago—viz: The erection of a blast furnace at Duluth, Minn., in which Minnesota ores are smelted by the use of coke made near at hand from Pennsylvania coal carried by vessels to the head of Lake Michigan—has been sufficiently successful to encourage other lake ports to seriously consider the advisability of carrying out a similar project."

## Lake Freight Matters.

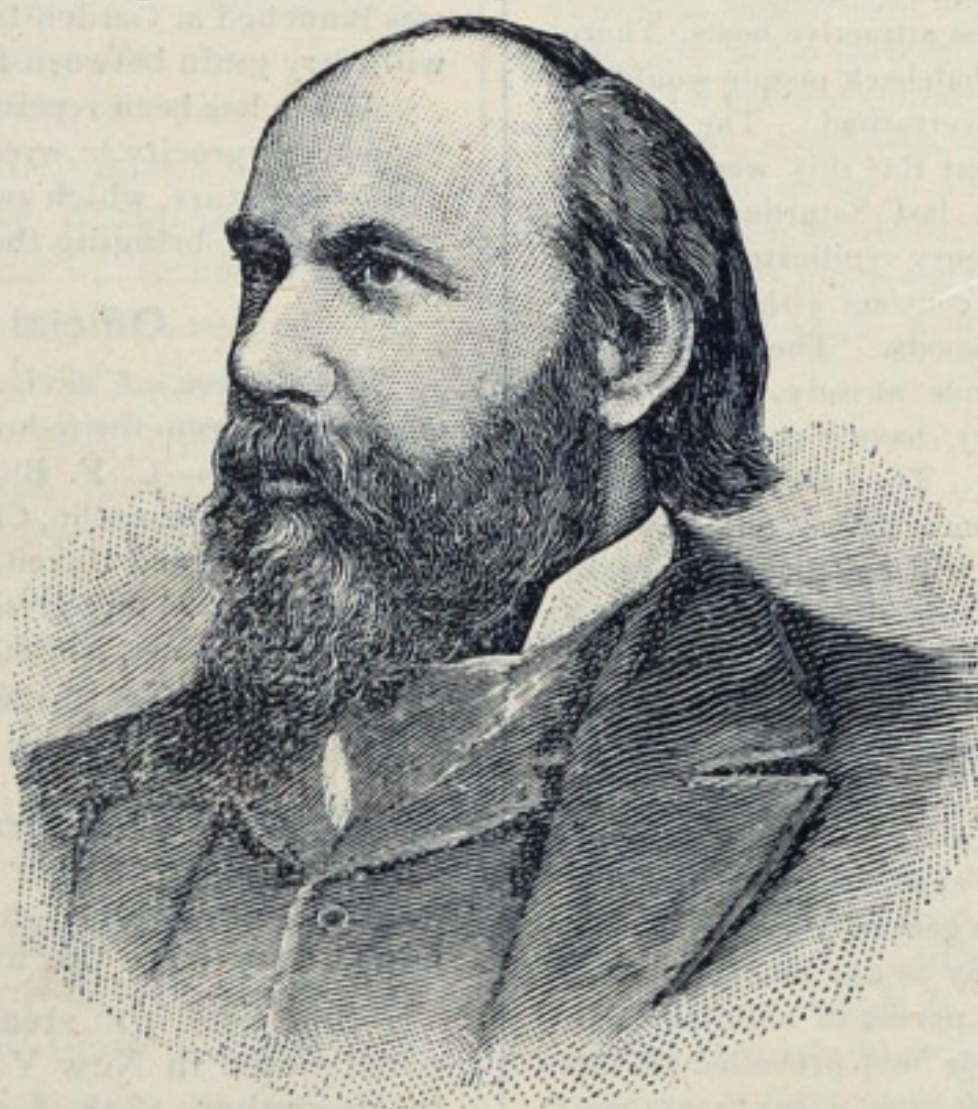
Notwithstanding continued depression in the market for pig iron and uncertainty as to the demand for iron ore during the fall and winter, lake freights are still ruling strong, and the supply of wild tonnage has been greatly short of the demand for two weeks past, especially in the ore trade. At the rates that have ruled during the past week—\$1.15 from the head of Lake Superior and 70 cents from Escanaba to Ohio ports—iron ore shippers have secured probably less than 25 per cent. of the "wild" tonnage that they would have chartered if the boats

were to be had. They are, however, thoroughly earnest in their refusal to advance rates on the shipment of unsold ore, and if an advance is secured later it will of necessity be the means of still further restricting the movement. Labor troubles in the Pittsburgh neighborhood have been referred to as a factor in the question of the demand for Lake Superior ore. It is true, of course, that the Carnegies are large consumers of lake ore. With furnaces running and mills idle stocks of pig iron will increase. Then too, other furnaces supplying the Carnegie mills will show increased stocks of pig, but as yet the suspension of work has not gone along far enough to have any particular bearing on the iron ore situation. The grain movement is still of most assistance to the general freight market. A large number of boats have been char-

tered at Duluth during the week for wheat to Buffalo at 3¼ cents and Chicago shippers have been caring for all vessels offered at the rates that have ruled for several weeks past. On large lots of wheat from Chicago to run two or three weeks, shippers' option, better than 2 cents has been offered.

## Light-House Appropriations.

As had been promised, the committee on commerce was given a hearing in the house of representatives on Tuesday of last week, and Chairman Wise immediately brought up the light-house bill, which has been in committee since the opening of the session. Messrs. Ho'man and Blount immediately began to talk against time, however, claiming that the action of the committee in reporting a single bill containing a number of items was out of order. They succeeded in having one of the regular appropriation bills taken up, and the light-house measure will again be turned over to another congress. There is danger now of losing even the meager appropriations secured in the civil sundry bill for light-ships at Bar point, the Lime-Kilns and Eleven-Foot shoal, but the lake members are making a strenuous effort to hold them.



JAMES J. HILL.



## CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,  
No. 13 Western Union Building, CHICAGO, ILL., July 21.

Be it said to the credit of the Lake Carriers' local executive committee—Capt. J. L. Higgle, Capt. John G. Keith, and W. R. Owen—that no half-hearted efforts were put forward to capture the murderer of R. J. Walker, the mate of the *Middlesex*, who was knocked into the river by a Seamen's Union delegate and drowned. The committee laid the case before the police within two hours from the time that deed was committed, and steadily spurred the detectives up in their endeavors to capture Walker's assailant. While this union delegate undoubtedly did not intend to murder the man by knocking him into the river, as sailors are supposed to be able to swim, a murder was nevertheless committed. Walker was the ward, so to speak, of the Lake Carriers' Association, and it was its duty to see that proper punishment was meted out to the man who had caused his death. It would have been very easy to have let the matter go, but the local committee did not seek the easier way. Full duty was done toward the man who had placed himself under the protection of the lake carriers. When the Seamen's Union fully comprehends that in assaulting crews on the vessels of the association they are not fighting with friendless and helpless non-union men, but are assailing the organization of owners, these assaults will be less frequent. It is the bounden duty of the lake carriers to protect every man sailing in their vessels, and the full powers of the association ought to be put forward in their defense.

The most significant event in the lake front fight for the week was the letter from Capt. John G. Keith in last Sunday's papers, in which Capt. Keith said the whaleback people are indifferent as to whether the Henry contract is maintained or not. The position of the whaleback people seems to be that their boat will be largest and most attractive running between the world's fair and the lake front, and that she is certain to get her full share of the business in any event. If she runs in a pool with the other boats of the syndicate, she will have to divide up her profits with smaller and less attractive boats. There is a good deal in this, and it is no wonder that the whaleback people would be pleased to have its arrangement with the syndicate overturned. The bill attacking the Henry contract will be filed by Col. Robert Rae this week. The excursion boats made enough money by their benefit last Saturday to defray all the expenses of the suit. The position of the Henry syndicate is said to be that it has nothing to do with the suit. It has a contract with the world's fair directly, and is waiting for them to deliver the goods. The world's fair directors, however, have enough trouble on their hands already, and are not taking kindly to the idea of a big lawsuit. First they have a very hot fight among themselves for and against President Baker. Then they have almost the certainty of not getting the full appropriation from congress, and expenses must be cut to the bone. It may be doubtful if they will feel disposed toward putting several hundred thousand dollars into piers for the benefit of lake transportation to the fair, if they can not see where the money is coming from. All in all, the prospect is not bright for either the syndicate or anti-monopoly, which a few weeks ago were figuring on so big a bonanza out of the world's fair transportation.

One hears constant talk of dull times in the grain trade, but as a matter of fact the traffic is about up to the normal standard at this time of year. Of course there will be a boom in grain freights as there generally is in midsummer, but the grain movement as it runs along from day to day has been about all vessel men had a right to expect. If people will persist in building boats at the present pace they must expect low rates, such as have prevailed all this season. What would have been brisk times with high rates a few years ago, has been considered dull this year, and yet as much grain has been moved week in and week out as then.

## Official Trial of a Storage Battery Yacht.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., July 21.—An official trial of the new yacht *Electric*, mentioned in this correspondence last week, was successfully made on the Potomac river a day or two ago. A party consisting of officials from the war and navy departments were passengers, and bear testimony to the efficiency of the machinery. The *Electric* passed over a one-mile course in 8:20, making the return trip with favorable wind and tide in 6:40, or an average rate of nearly 8 miles an hour. During this trip, General Williamson and Lieutenant McFarland, both electrical experts, took observation of the action of the machinery. They found that the motor made 440 revolutions per minute, which is geared down to about half that rate in the propeller. This speed is obtained at the expenditure of about 2½ horse-power. Electricians all over the country are taking an interest in this experiment, and Maj. Frank Aldrich, of the Hanson Battery Light and Power Company, who designed and successfully operated the yacht, is delighted with the success of his venture. He proposes to at once build a larger yacht, 20 by 5 feet, designed especially for speed. With increased storage power, he expects to be able to make 12 miles an hour easily.

On the receipt of a favorable report of Messrs. Cramp & Son, on the Berdan iron-clad destroyer, with proposition to construct one and give a guarantee that it will fill the conditions provided for in the bill now before

congress, the chairman of the coast defense committee in the senate and the chairman of the committee on naval affairs in the house of representatives requested the secretary of the interior to have Gen. Berdan's application for patent made special, and two patents have been issued on the destroyer.

## Lake Matters in Canada.

Special Correspondence to the MARINE REVIEW.

KINGSTON, ONT., July 20.—Quite a flutter of excitement was caused in marine circles a few days ago when it was announced that the government was about to abolish the canal toll rebate. The cabinet met and made a change that leaves the law about the same as it was. The order-in-council read that a rebate would be allowed on all grain shipped at Canadian Lake Ontario ports for Montreal. The word "Canadian" was struck out, which makes the order include American ports. As little or no grain is shipped from American ports on Lake Ontario, for Montreal, the change is immaterial in so far as the main question is concerned. One mariner, however, claimed that Ogdensburg was a Lake Ontario port, and in consequence stated his intention of applying for the rebate on grain shipped there. If he can show that the grain did not come through the Welland canal, he will be allowed a rebate on the lower canals, but as all the grain at Ogdensburg is simply stored there it is safe to say that the old law will cover the case. One American city that will get a benefit will be Oswego. It now has its choice between the Erie and St. Lawrence routes in forwarding grain.

A large deputation, comprised of members of the board of trade, are now at Montreal interviewing the officers of the Montreal Transportation Company, with regard to the erection of an elevator here during the winter.

A new lake barge for the Kingston & Montreal Forwarding Company was launched at Garden Island on Saturday. She is 180 feet over all, and will carry grain between Fort William and Montreal.

Word has been received in Ottawa that the American bill granting Canada reciprocity in wrecking and salvage, is now ready for the president's signature, which awaits the proclamation of the governor-in-council at Ottawa, bringing the Canadian act into operation.

## Official Numbers and Tonnage.

The bureau of navigation, William W. Bates, commissioner, assigned official numbers to the following lake vessels during the week ending Saturday, July 16: Steam—C. F. Bieleman, Detroit, 2,056.20 tons gross, 1,709.16 net, No. 126,887; Comanche, Cleveland, 357.21 tons gross, 190.01 net, No. 126,888; Valley City, Grand Haven, 263.86 tons gross, 220.66 net, No. 161,693; Liberty, Milwaukee, 42.96 tons gross, 27.37 net, No. 141,214; Gadabout, Oswego, 13.61 tons gross, 6.81 net, No. 86,220. Sail—Hattie Bradwell, Chicago, 26.01 tons gross, 24.71 net, No. 96,186.

## In General.

Up to 1828 all steamers built in the United States were furnished with copper boilers. When the *Constitution* and her mate the *Constellation* were built for the day line to run to Albany, they were the first steamboats furnished with iron boilers.

The first iron steamboat ever built in the United States was constructed in New York City by the West Point Iron Works in December, 1838, for the Lake Pontchartrain route and named the *United States*. The second iron steamboat was built at Pittsburgh for the Ohio river trade in December, 1839, and named the *Valley Forge*.

Capt. Alex McDougall said when in Cleveland a few days ago that the English company, in which the Johnson line of trans-Atlantic freight steamers are interested, will begin the construction in England of whaleback vessels for ocean service as soon as plans are prepared and forwarded from the West Superior yard of the American Steel Barge Company.

Foreigners do not believe that steamships equal in every respect to the crack British ocean "greyhounds" can be built in this country. The Cramps of Philadelphia are about to upset this belief. They showed that Americans can build war vessels of the best kind. And they will show that what it is possible to do with one class of vessels here, it is possible to do with all kinds.—Maritime Register.

Following are some of the principal dimensions of the establishment of the Newport News Ship Building and Dry Dock Company at Newport News, Va.: Shipyard contains 75 acres of land; frontage on the water, 2,600 feet; buildings cover 7 acres; dry dock, length on top, 600 feet; width on top, 130 feet; width on bottom, 50 feet; width at entrance, 93 feet; draught of water over sill, 25 feet; ship ways, No. 1, 400 feet; No. 2, 400 feet; No. 3, 450 feet; No. 4, 450 feet; Nos. 5, 6, 7 and 8 each 500 feet.



# Lake Carriers' Association.

M. A. BRADLEY, President.

VICE-PRESIDENTS: { James W. Millen, Detroit, Mich. John G. Keith, Chicago, Ill.  
Frank J. Firth, Erie, Pa. W. S. Brainard, Toledo, O.  
Thomas Wilson, Cleveland, O. R. P. Fitzgerald, Milwaukee, Wis.  
Peter F. Miller, Buffalo, N. Y. Alex. McDougall, Duluth, Minn.  
Charles H. Keep, Secretary, Buffalo, N. Y. Geo. P. McKay, Treasurer, Cleveland, O.  
Harvey D. Goulder, Counsel, Cleveland, O.

Members of the Lake Carriers' Association now own and manage more than 600 vessels, valued at more than \$43,000,000. Nowhere in this or any other country is there a more representative organization in the shipping business, and the system now attending the management of association affairs warrants active interest in every detail pertaining to lake transportation interests. The reorganization of last winter was a very wise move, as it has resulted in unanimous action in everything coming before the association. There is no doubt that next year will see an increase in membership that will practically include every ton of vessel property of importance on the lakes.

## CASE OF COL. LUDLOW AND COMMANDER HEYERMAN.

No steps have as yet been taken to detail officers permanently to take the places of Col. William Ludlow and Commander Heyerman in the light-house service on the lakes, and it is probable that nothing will be done in the matter until the association is given a final answer regarding its repeated requests that these officers be given a hearing in person on the subject of their actions while preparing for lighting the St. Mary's river. There is, of course, only a hope that the light-house board will reconsider its action and grant the officers a hearing, but the case is still pending and will not be dropped by lake vessel owners as long as there is any prospect of reinstatement. After a thorough and impartial investigation of the subject, the Lake Carriers' Association has gone to Secretary Foster of the treasury department with the claim that the order relieving Col. Ludlow and Commander Heyerman was based upon a partial apprehension of the facts, and that by that order not only have two most efficient officers been subjected to unjust criticism, but that the public service has been greatly injured. The pending request is that the suspended officers be summoned to Washington to be heard in their own behalf; that the officers be heard before the board itself and that a report of the inquiry be made to the secretary.

## Star Chamber Proceedings.

An important feature in the publication of letters, telegrams, etc., pertaining to the removal of Col. William Ludlow and Commander Heyerman from the light-house service on the lakes was a statement from the light-house board, which was first printed in one of the Washington papers. The statement was published, it was said, on authority from the board. It was, however, evidently incomplete and misleading. The REVIEW wrote its Washington correspondent to learn whether the statement had been given out as an official communication from the board. The answer received was as follows:

"The copy of the report alluded to was given by some one in the office of the light-house board to a reporter on one of the city papers. Just who gave it is not easy to find out, and it seems impossible to gain any further information on this subject. We find this the case more with this part of the public service than with any other. Why should such star chamber proceedings prevail?"

## Contracts of Common Carriers.

The house of representatives committee on interstate and foreign commerce has ordered a favorable report on the bill making it unlawful for any common carrier, either by land or water, to insert in any bill of lading or shipping document, any clause or agreement whereby the carrier shall be relieved from liability for loss or damage arising from negligence or failure in

proper loading of any merchandise or property committed to its charge, nor shall it be lawful to limit its liability to less than a full indemnity to the claimant for any loss or damage incurred. The bill further provides that it shall not be lawful to insert in the bill of lading of any vessel plying between the United States and foreign countries any agreement whereby the obligations of the owner of the vessel properly to equip the ship, shall in any wise be lessened. The bill relieves the owners of vessels, however, of all responsibility for damage or loss to merchandise resulting from error of judgment in navigation or management of the vessel if it is shown that the vessel was in all respects seaworthy and properly manned and equipped in starting on her voyage.

## Canadian Labor by Contract is alone Prohibited.

The treasury department has again been called upon by one of the branches of the Seamen's Union on the lakes for an opinion regarding the employment of Canadian seamen on American lake vessels. The department renews the opinion expressed some time ago in the following correspondence:

TREASURY DEPARTMENT, March 16, 1892.

SIR:—I hand you herewith a communication from the acting solicitor of the treasury, dated the 11th inst., in which he expresses the opinion that the bringing of aliens to this country under contract to perform labor as seamen on board American vessels sailing between ports of the United States and ports of Canada constitutes a violation of the act of Feb. 26, 1885, and the act of March 3, 1891. In this opinion the department concurs. Obviously the employment of foreigners as sailors, etc., on board American vessels sailing between ports of the United States and Canada is not in violation of the law, provided they already have domicile within the United States at the time when such employment begins and have not been brought into the country under contract to perform service.

It is a necessary inference that in case an American vessel, while in a foreign port, is deprived of its crew, or a portion thereof, by desertion, or otherwise, the owner or master may there engage alien sailors to man the vessel. Any other construction of the law would tend to cripple American commerce, a result which congress could not have intended.

To Hon. Jno. B. Weber, Commissioner of Immigration, New York.

DEPARTMENT OF JUSTICE,  
Office of the Secretary of the Treasury,  
WASHINGTON, D. C., March 11, 1892.

SIR:—By reference of Assistant Secretary Nettleton, I have before me a letter addressed to him by Superintendent Owen, under date of the 26th ult., with regard to the employment of Canadians by captains and by owners of American vessels "plying between Canada and the United States in violation of the alien contract labor law." It is assumed by the superintendent that such employment is in violation of said law; and as the question has not been raised in the department, he suggests that the opinion of the solicitor be requested.

Section 4131, revised statutes, prescribes that "officers of vessels of the United States shall in all cases be citizens of the United States." If Congress has the power as unquestionably it has, to require that the officers of vessels of the United States shall be citizens of this country, it also has the power to prescribe that only citizens of the United States shall be employed on American vessels as seamen; or that it shall be unlawful to enter into contracts with aliens to perform service as seamen on board American vessels.

Now, while congress has not seen fit to prohibit the employment of aliens on American vessels, in express terms, yet I am of the opinion that bringing aliens or foreigners to this country under contract to perform labor as seamen, etc., on American vessels running between the United States and Canada, is in violation of the act of Feb. 26, 1885, and the act of March 3, 1891. In this opinion I have the concurrence of Elihu Colman, United States attorney for the eastern district of Wisconsin.

F. A. REEVE,

Acting Solicitor.

TO THE SECRETARY OF THE TREASURY.

Again reports of the make of pig iron, published by the American Manufacturer of Pittsburgh, show a slight downward tendency, the reduction in weekly production on July 1 as compared with June 1 being 3,040 tons. All of this reduction is at anthracite and charcoal furnaces, the production of coke or bituminous furnaces showing practically no change. "We see no reason," says the Manufacturer, "to change the opinion expressed in our issue of June 10, that the production of pig iron in the first six months of 1892 will be in the neighborhood of 4,750,000 gross tons. Our reports would indicate a production, to be exact, of 4,771,270 gross tons. The make for the first six months of 1891 was 3,371,925 gross tons.



### Record of Speed and Big Cargoes.

[Masters or owners are invited to report improvements on this list.]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company of Milwaukee, 3,507 gross, or 3,944 net tons, Escanaba to South Chicago; Western Reserve, Peter Minch of Cleveland, 3,314 gross, or 3,717 net tons, Escanaba to Ashtabula.

Grain: E. C. Pope, Eddy Bros. of Bay City, 125,730 bushels of corn, Chicago to Buffalo, draft 14 feet 8 inches; Western Reserve, Peter Minch of Cleveland, 112,431 bushels of wheat, Chicago to Buffalo; W. H. Gilcher, J. C. Gilchrist of Cleveland, 114,982 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour; Saranac, Lehigh Valley Line of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

### Iron Mining.

#### VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 75 00
Champion Iron Company.....	25 00	.....	60 00
Chandler Iron Company.....	25 00	42 00	45 00
Jackson Iron Company.....	25 00	.....	100 00
Lake Superior Iron Company.....	25 00	43 00	45 50
Minnesota Iron Company.....	100 00	73 50	80 00
Pittsburgh & Lake Angeline Iron Co.....	25 00	.....	145 00
Republic Iron Company.....	25 00	.....	18 00
Ashland .....	25 00	.....	.....
Section Thirty-three.....	25 00	.....	7 50
Brotherton.....	25 00	2 00	2 50
Iron Belt.....	25 00	2 25	2 50
Aurora.....	25 00	8 25	.....

Shipments of iron ore from Two Harbors up to Wednesday, July 13, aggregated 405,865 gross tons, of which 234,691 tons was from the Chandler and 169,493 tons from the Minnesota mine. On the same date shipments from Ashland aggregated 801,309 tons, divided as follows: Ashland 79,090 tons, Aurora 132,536, Colby No. 2 24,637, Rand, 2,914, Tilden 107,104, Iron Belt 52,088, Montreal, north vein 15,077, Palms 23,712, Section 33, north vein 2,259, Anvil 1,696, Brotherton 38,791, Comet 5,184, Carey 15,157, East Norrie 71,899, Newport 29,140, Norrie 145,007, Pabst 19,789, Sunday Lake 26,424, Windsor 6,131.

Messrs. Bates and Barber, representatives of Henry W. Oliver, Jr. of Pittsburgh are negotiating for a lease of the Camden iron property, Mesaba range. The deal will probably be closed in a few days. The provisions of the lease are 50 cents royalty on Bessemer ore, 35 on non-Bessemer, and a minimum output of 75,000 tons, the lease to expire in twenty years. The Camden covers three forties.—Vermillion Iron Journal.

Joseph L. Colby of Cleveland, president of the Penokee and Gogebic consolidated mines, gives notice that the companies operating the Superior, Comet, Colby and Palms mines have sold all their effects to the corporation known as the Penokee and Gogebic consolidated mines, and hereafter the business of these mines will be conducted entirely by this latter corporation.

Suit has been begun in the circuit court of Milwaukee county, Wis., by the Marquette Iron Syndicate against S. K. Wambold, A. A. Hoskins and Napoleon Devereux, on a demand for \$75,000. As an incident to the suit, \$13,000 worth of stock in the First National bank of Hurley has been seized.

Shipments of ore from Two Harbors are 115,000 tons in excess of the output at this time a year ago and the greater portion of the gain is from the Chandler. A combined output of 1,100,000 gross tons for the season is expected from the Minnesota and the Chandler.

### Work of the Ship Yards.

The Globe company, Cleveland, has begun work for the Chicago Ship Building Company on a shearlegs, which will be a duplicate of the one recently erected at the Globe yard. These shearlegs are capable of lifting 100 tons. The largest derrick of this kind in the country is in the marine department of the Maryland Steel Company's works, Sparrows' Point, Md. It is 125 feet high and is capable of lifting 125 tons.

Several weeks ago it was announced that S. F. Hodge & Co. would build the engines for the whaleback world's fair boat, and this week the contract for six boilers for the boat was given to the Cleveland Ship Building Company. These boilers will

be 11 by 12 feet, each having two 42-inch Continental corrugated furnaces and a steam dome. The contract includes one breeching, common to all boilers, and one oval stack 7 by 9 feet, with a 9-inch jacket. Work on the big monitor at the yard of the Cleveland company, for which the keel was laid several days ago, is delayed by the Pittsburgh strike of iron workers. The announcement of another contract from this yard within a few days would not be surprising.

At the Wyandotte yard of the Detroit Dry Dock Company Saturday, the new steel screw passenger steamer Wyandotte, built for the J. P. Clark estate, was launched, and is expected to be ready to take the place of the Riverside on the Detroit river toward the close of the present season. The Wyandotte is 165 feet in length, 35 feet wide and of very light draft. She will very probably have a speed of 17 miles an hour.

Wheeler & Co., West Bay City, Mich., will build for the Hawgood & Avery Transit Company, Cleveland, a steel steamer 360 feet long and 45 feet beam.

### From Various Sources.

The Cunard Steamship Company has decided to name their new steamships being built Campania and Ucania.

"When all the ship builders of this country get a trial at government work," says Vice-President John F. Pankhurst of the Globe Iron Works Company "there will be some money in it. After the builders have all had a trial of treasury or navy department methods of supervising the construction of vessels they will know how to bid on contracts. I do not mean by this that the government gets any more or even as much for its money but the annoyance of red tape systems is almost unbearable."

The stern wheel tow boat George S. Ross of Ford City is said to be the fastest boat on the Allegheny river. She is 20 feet beam by 120 feet long, with a pair of horizontal engines, having cylinders 10½ inches diameter by 44 inches stroke. She makes forty-four revolutions per minute cutting off at half stroke. The boiler is one of the celebrated Roberts water tube boilers, occupying a space of only 5x7 feet and having 21 square feet grate surface and 700 square feet of heating surface. It furnishes easily all the steam required by the engines and is very economical in fuel, burning soft coal.

Col. Jared Smith, government engineer in charge of river and harbor work at Ohio ports on Lake Erie, recommends the abandonment of further improvement on the old channel at Toledo. He says the new channel is now wider and better than the old and further expenditure on the latter is not advisable. A million cubic yards have been taken from the channel and a depth exceeding 16 feet has been attained with a width of 200 feet. Col. Smith says it is extremely difficult to obtain a uniform depth in this channel owing to the great quantity of dirt, silt, etc., which comes down the Maumee. To prevent this he suggests a system of piers or dikes. The cost of the new channel so far exceeds \$750,000.

A life boat has recently been built that will, it is stated, right itself in ten seconds after being capsized. The boat is 30 feet long, 7 feet beam and 3 feet deep, caravel built, and with air chambers at bow and stern, covered with waterproof canvas. The peculiar features in the construction are the presence of a false bottom, which runs from stem to stern precisely at water line, and is furnished with two circular gratings into which, if necessary, pumps can be inserted. In the sides, just about midships, there are long flaps working on hinges which when opened, will permit any water above the false bottom to run out and when closed are water tight. The space below the false bottom is packed with dry tule grass, which is even lighter than cork and almost impervious to water.

Professor R. H. Thurston has the following to say of the work "The Steam Engine" by Daniel Kinnear Clark, recently published by Blackie & Son, New York and London: "The appearance of an exhaustive work on the steam engine, written by an engineer of fifty years' experience, is an event of exceptional importance to all who are interested in the subject. This work will be exceptionally welcome as it includes the slowly-gathering knowledge of the subject which has been accumulated since the days of Watt." The work consists of four volumes and about one half of the fourth volume is devoted to marine engineering with diagrams of every style of marine engines turned out during the past few years.



### Modern Wooden Steamers on the Lakes.

An engraving on this page gives a fair idea of the modern wooden steamboats, built mainly at West Bay City, Mich., during the past year. Although steel vessels being turned out from big plants at half a dozen ports on the lakes are replacing to a very large extent the wooden fleet, the class of wooden boats shown here has held its own in Detroit and West Bay City yards. The boat on the stocks, the Uganda, is already in commission. She was built by F. W. Wheeler & Co. of West Bay City for James McBrier and others of Erie, Pa., and is a duplicate of the steamers Sauber, Tampa and Iosco, all turned out recently by the same builders. These boats carry about 2,500 gross tons on 16 feet draught.

The Uganda's dimensions are: Length between perpendiculars 290 feet, length over all 308 feet 6 inches, beam, molded 40 feet, beam, extreme 41 feet, depth, molded 23 feet. The engine is a triple expansion, with cylinders 20, 32 and 54 inches by 42 inches stroke, and there are two boilers 11 feet 6 inches in diameter and 12 feet long, built to withstand 160 pounds pressure. The engraving is from the Railroad and Engineering Journal, New York.

interest of the nation in maritime commerce is steadily increasing. The necessity of concentrating all official matters connected with this under the control of one active, intelligent department is now imperative. The desire for such a change is strong and it has been presented with good support and sound arguments. But the improvement will not be secured without much hard work. There is active objection made to any increase in the number of government departments, and the reasons given are in the main sound. Where work is done in a slovenly way, so that a great industry really suffers from an inefficient administration of the laws caused by the overburdened condition of a government department, it is evident that a new department must be created. The treasury department has not only to supervise the legal regulations governing the merchant marine, but in addition it is the head of the light-house board, the life-saving and steamboat inspection services. There will in time be further regulations made, such as wreck inquiry courts, government examination of masters and mates, physical examination of seamen and similar matters. It is manifestly absurd to believe that such important affairs can be well looked after under the present management. They should be consolidated under the control of a marine board. The interests concerned are of such importance as to warrant this. The good that would come would not be confined to smoother and better administration of regulations, but a more active participation in the work by the



MODERN LAKE STEAMER.

### Demand for a Shipping Department.

Recent letters from Mr. E. C. O'Brien, commissioner of navigation, relative to the establishment of a wreck inquiry board and with reference to several subjects of a maritime nature, will tend to show the merits of the claim that the shipping interests of this country should be represented in a department of the government. A writer in the Maritime Register of New York presents this subject very ably in the following:

"The secretary of the treasury, better than any other man, must know how little personal attention the treasury chief can give to the many marine matters that are now placed under his jurisdiction. The work is now divided among many bureaus, each entirely independent of the other. There is no sympathy between them, much of the work is done in a purely perfunctory manner, few suggestion of any value come from them, with the result that instead of obstacles being removed, a sort of circumlocution office is maintained and reform and simplicity in our navigation laws and regulations are made almost impossible. The secretary of the treasury is the ostensible head and the secretary knows nothing about shipping affairs. The work of the treasury department connected with the finances of the nation is on the increase, and the prospects of closer attention to purely shipping affairs, therefore, becomes more remote. The

official head would bring him into closer relationship with shipping people, with the probability of suggestions and reforms being presented that would be to the great benefit of our merchant marine."

### Another Record Broken.

The steamer Western Reserve, built by the Cleveland Ship Building Company and owned by Phillip Minch and others of Cleveland, on Wednesday took on at Escanaba for Ashtabula a cargo of 3,281 gross tons of ore. With the addition of 1 per cent. allowed for moisture, this cargo aggregates 3,314 gross or 3,717 net tons, and is the largest load ever carried through the rivers. Cargoes carried by the steamer Maryland between Escanaba and South Chicago are, of course, still in the lead, on account of the advantages in deep draft secured to vessels in that trade. The steel steamer Gilcher, which left Escanaba just previous to the Western Reserve carried 3,181 gross tons bill of lading, or 3,213 gross, full cargo weight.

Members of the firm of M. A. Hanna & Co. of Cleveland are largely interested in the new company which will rebuild the abandoned furnace plant of the Union Iron Works, Buffalo. The new corporation, capitalized at \$200,000, will be known as the Buffalo Furnace Company. Work of rebuilding will begin immediately and the plant will have a capacity of a little more than 200 tons daily. The product will be mainly foundry iron. Names connected with the enterprise insure its success.



# MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, . . . . . } PROPRIETORS.  
F. M. BARTON, . . . . . }  
HOMER J. CARR, . . . . . Associate Editor and Manager Chicago Office,  
Western Union Building, 110 LaSalle Street.

Published every Thursday at No. 516 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—\$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels .....	1,592	756,751.53
Sailing vessels.....	1,243	325,131.06
Canal boats.....	703	72,515.42
Barges.....	62	20,472.37
Total.....	3,600	1,154,870.38

Tonnage built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
Total.....	1,021	485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 228 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014. Number of boats through St. Mary's Falls canal in 1891, 225 days of navigation, 10,191; tonnage, net registered, 8,400,685. Number of boats through Suez canal during 1891, full year, 4,207; tonnage, net registered, 8,698,777.

Entered at Cleveland Post Office as Second-class Mail Matter.

ONE of the Canadian journals noted for support of the dominion government's canal policy, the Canadian Manufacturer, finally admits that there is discrimination against American ports and in favor of Canadian ports. Such an admission is all that is needed in the canal controversy. At no stage of the controversy has it been claimed by anyone acquainted with the subject that there is any direct difference in the treatment accorded Canadian vessels and vessels of the United States passing through the canals. The discrimination in favor of Canadian ports and against American ports and American citizens through the medium of canal tolls is what is complained of. This being the case then, President Harrison's recommendation of retaliation by means of a system of tolls at the St. Mary's Falls canal that will discriminate against Canadian ports, is certainly sound in every particular. As had been expected the new order in council from the Canadian authorities a few days ago amounted to nothing. It was simply for the purpose of correcting a mistake in the order of April 4 last, relative to grain shipped through the canals from American ports on Lake Ontario. The whole question remains just as it was previous to the recent reciprocity conference.

READERS of the REVIEW will pardon reference to the fact that this journal was first in bringing the question of discrimination in Canadian canal tolls to the attention of the Lake Carriers' Association and through that body to the state department. We are not in the habit of calling attention to work of this kind when it falls within the ordinary duty of a publication representing lake interests, but in this matter of canal tolls there is a special gratification in knowing that after a long struggle to gain the support of all vessel owners on a question

in which only a portion of them were directly concerned, it has finally come into the hands of the president and through him has been submitted to congress.

SECRETARY Charles Foster, of the treasury department, has sent to congress a letter recommending the passage of a bill to define and establish anchorage ground for vessels in the navigable waters in and around Chicago. The object is to insure safety to water transportation interests during the world's fair. Legislation of this kind is desirable, as schemes of all kinds for private use of the river and water front will undoubtedly crop up during progress of the exposition.

CONGRESS can ask Secretary Foster of the treasury department for correspondence in the office of light-house board bearing upon the dismissal of Col. Ludlow and Commander Heyerman and can act upon the evidence presented in the history of the case. Or again, in event of being turned down by the treasury department Col. Ludlow still has the right of a court of inquiry in the war department. This last resort, the court of inquiry, could, however, only exonerate Col. Ludlow, as reinstatement could not be secured through such action. The services of both of these efficient officers will be lost entirely to the lakes if the treasury department persists in its present stand in the matter. In event of appointment of a permanent engineer officer for the Ninth and Eleventh light-house districts, Col. Ludlow must relinquish the position he still holds in these districts as an army officer in charge of river and harbor work. The river and harbor work and light-house service of engineers go together in these districts.

COL. WILLIAM LUDLOW, corps of engineers, U. S. A., is one of the few men who possess a full knowledge of the St. Mary's river and its difficult navigation. He has been indefatigable in his efforts to acquaint himself thoroughly with the lake navigation and with the needs of the districts in his charge. After a long struggle on the part of the lake vessel owners, preparations are being made by the light-house board to light the St. Mary's river. The project is one of the most important light-house projects ever undertaken on the lakes. Is it not reasonable then, in the light of a misapprehension of facts connected with the removal of Col. Ludlow and Commander Heyerman, that the request for a further hearing in their case should be granted? Vessel owners and lake shippers who make this request have great interests at stake.

IF THE water at St. Mary's Falls canal continues at its present stage during a month to come, the canal officials expect to have a day when they will record the shipment of 100,000 tons of freight through the canal. What a wonderful record for a single channel affording less than 15 feet draft. The freight tonnage during June, 1,671,879 tons, was the largest in the history of the canal, exceeding any previous month by 126,272 tons.

## Grain at Chicago and Duluth.

Stocks of grain at Chicago and Duluth on Monday, July 18, were as follows:

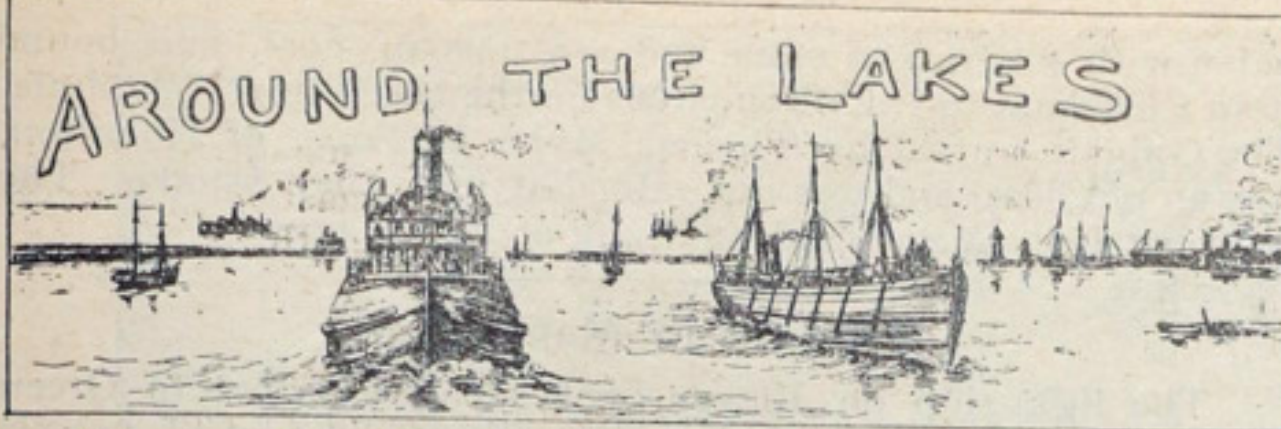
	Chicago.		Duluth.
	Wheat, bu.	Corn, bu.	All wheat, bu.
In store.....	4,560,000	4,118,000	3,403,043
Decrease last week.....	118,000	.....	138,320
Increase last week.....	.....	18,000	.....

In addition to the above there is 1,730,000 bushels of oats, 110,000 bushels of rye and 23,000 bushels of barley in store in Chicago.

SEND 50 CENTS IN STAMPS TO THE MARINE REVIEW FOR TEN PHOTOTYPES AND GRAVURES OF LAKE STEAMERS NEATLY BOUND.

Send 20 cents in stamps for Tabulated Statement showing Lake Superior ore production for 1891, and the past 36 years.





Steamer Monohansett, rebuilt by Capt. James Davidson of West Bay City and supplied with new engines and boilers, is ready to resume service.

Mr. Stewart Murray, formerly agent for the Lehigh Line at Chicago, has been appointed agent of the Northern Steamship Line at Minneapolis.

On her last trip the steel steamer Emily P. Weed, built by F. W. Wheeler & Co. of West Bay City, carried 153,000 bushels of oats from Chicago to Buffalo.

James Jackson, mate of the steamer Tioga for three seasons, succeeds Capt. John Clossey as master of the New York. Capt. Clossey has been assigned to the Nyack.

City of Venice, City of Genoa and City of Naples are the names assigned by Capt. James Davidson to the three boats just added to his wooden fleet of six big steamers.

C. F. Bieleman is the name given to the wooden steamer being built at West Bay City by F. W. Wheeler & Co. for A. E. Stewart, C. F. Bieleman and others. She is nearing completion.

The captain, engineer and crew of the steam yacht Say When passed resolutions of respect on the death of William Boppel, brother shipmate. The resolutions were put on the yacht's log.

Owners of the steamer Kalamazoo, sunk in Lake Michigan by the steamer Pilgrim a month ago, have purchased the steamer Saugatuck and will run her between Saugatuck and Milwaukee.

On an average draft of 14 feet 5 inches the new whaleback steamer Thomas Wilson a few days ago delivered at South Chicago from Lake Superior a cargo of ore aggregating a trifle less than 3,000 net tons.

The whaleback steamer Thomas Wilson carrying 2,800 tons of coal was unloaded at the Lehigh dock, Superior, recently in a little less than twelve hours, or at the rate of about sixty tons per hatch per hour.

In raising the steamer Progress from the Detroit river the Murphy Wrecking Company will use casks, after the method adopted in raising the Kasota. The Progress is to be delivered in Detroit within fifty days.

On her last trip down from Escanaba the wooden steamer Iroquois, although of only ordinary dimensions, carried 2,344 gross tons of ore on a draft of 15 feet 10 inches. She immediately loaded 2,600 tons of coal for Milwaukee.

If the \$20,000 award of United States Judge Deady in the salvage case of the steamer Zambesi against the whaleback W. L. Wetmore is sustained, it will be divided as follows: Crew \$5,000, master \$5,000, mate \$1,000, pilot \$2,000, Zambesi \$7,000.

W. H. Boyd, who had been up to a short time ago connected with shipping offices in Detroit and Buffalo, has opened a secret service detective bureau in Detroit with an office at 901 Hammond building. He proposes to organize men for the protection of property in strikes of all kinds.

Senator McMillan on Monday secured the passage by the senate of the bill which has already passed the house for the appropriation of \$15,000 for the establishment of weather bureau stations on Middle and Thunder Bay islands, Lake Huron, and for the establishment of telegraphic communication between Alpena and the islands.

A cargo of 3,018 gross tons of iron ore was brought down from Escanaba by the Menominee steamer Roman on her last trip, the boat's average draft being 16 feet 6 inches. She passed down the rivers without difficulty of any kind and went into Fairport without a tug. This is the largest cargo as yet carried by any of the Menominee steamers.

It will be three weeks or more before the whaleback steamer Pathfinder, owned by Samuel Mather and others of Cleveland

and launched on Saturday last by the American Steel Barge Company, goes into commission. Work on this boat and her consort the Sagamore, has been very much delayed, but they will cut an important figure as big ore carriers when completed. The steamer is 340 feet long and 42 feet beam.

Capt. Thomas Collins, pioneer of St. Lawrence river navigation, died at his home in Clayton, N. Y., last week of paralysis. He was born in Oswego seventy-nine years ago. In 1839 he sailed the Henry Cleveland into Chicago with the first load of stone for piers at that port. Announcement is also made from Oswego of the death of Charles Allison, who had been connected with the old Northern Transportation Company in Cleveland, Oswego and other lake ports as early as 1852. At the time of his death he was the head of the firm of Allison, Stroup & Co., with offices in both New York City and Boston.

Canadian vessel owners have been trying to secure a reduction in dock charges at the new government dock in Kingston. Charges on large vessels are very much higher than at docks conducted by private corporations in United States ports. One of the officials of the Canadian public works department gives out the startling declaration "that it was in order to accommodate these heavy vessels, that the dock was built upon such a large and expensive scale, and it is only fair that such craft should bear a proportionate share of the outlay." With the tendency everywhere to encourage the construction of vessels of large capacity, this is certainly strange reasoning.

In the month of June the steamer Pontiac made six round trips between Marquette and Lake Erie ports carrying 2,450 gross tons of ore to a trip. One of these trips was made in 4 days and 22 hours, including time of loading and unloading cargo. The Pontiac's cargoes will certainly compare very favorably with any of the big loads from Lake Superior and her time is wonderful. The new boats of the Cleveland-Cliffs Company are also starting out very well. The Pioneer, built for the pig iron trade, carried 100 tons more than was expected of her on her first trip with iron ore. Although guaranteed to make only 13 miles an hour loaded and 15 miles light, her trials of speed have shown that she will greatly exceed these figures. The Cadillac, built by the Chicago Ship Building Company, has just delivered a cargo of 1,975 gross tons from Lake Superior. She is only 235 feet long and 37 feet beam and was built at a cost of little more than half that of some of the big steel ore carriers. It is claimed that she will make a round trip to Lake Superior on sixty tons of fuel.

#### They Were Named Chicago.

To those who believe in the influence of the name upon the luck of a vessel, the fate of the two Liverpool steamers which have borne the name of the city on Lake Michigan will be an interesting comparison and a strong argument in support of their theory. The Guion Line steamer Chicago was lost on Jan. 12, 1868, on her homeward voyage from New York, having gone ashore within a few miles of the Old Head of Kinsale, at 5 o'clock in the afternoon during a heavy fog. She was a fine vessel of 3,000 tons, only launched fifteen months previously, and built like all the other early vessels of that line, of which she was the second, at Palmer's on the Tyne. All hands, the passengers and baggage as well as the mails and specie, were safely landed, but after three days on the rock she parted amidships and became a total wreck. It will be seen that the circumstances attending this disaster and the loss of the Inman and International Company's steamer City of Chicago a few days ago were practically identical, and the positions in which they occurred are close together.—Fairplay, London.

#### Wrought Iron versus Steel Tubes for Boilers.

Mr. A. Blechynden of Barrow-in-Furness, England, has published an account of some very interesting experiments which he undertook with a view to ascertaining the relative excellence of wrought iron and steel in the manufacture of non-leaking boiler tubes. He used tubes of Siemens-Martin steel and Scotch BB brand of wrought iron in his experiments. The general result was that after several successive heatings in a furnace and coolings in water the iron tubes were found to have contracted less than the steel tubes and that the steel tubes were much looser in their sockets than the iron tubes. His argument is therefore that wrought iron is more suitable for boiler tubes than steel, especially in high pressure boilers.

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### The Leathem-Roanoke Case.

A full report of the sensational case of Leathem and others vs. the Roanoke, decided recently by Judge Jenkins of Milwaukee, will be found in the Federal Reporter, issue of the 5th inst. The court introduces the decision, which has already been printed in part in the REVIEW, with the following summary: "A contract to pay for salvage service a fixed price absolutely, without respect to success or failure, does not change the character of the service. It remains a salvage service, but the measure of compensation is gauged by the contract, and not by the danger encountered or the value of the property saved. Such a contract, in any event, does not affect the admiralty jurisdiction, nor the lien granted by the maritime law for salvage service. A contract between the salvors and the owner of the ship for a fixed sum payable in respect to the ship and for a larger sum payable in respect to the underwriters is tainted with fraud and will not be enforced. Settlements by the master, deliberately and fairly made, are upheld. But such settlements, made pursuant to and in furtherance of a contract to defraud underwriters, will not be sustained. Compensation can not be abated for inefficiency of wrecking material hired at a fixed price by the day and subject to discharge at the will of the master. Retaining the service, the contract compensation must be paid.

### Wrecks and Heavy Losses.

Two wrecks occurring near Cleveland within the past week can be numbered among the total losses. Owners of the tug John B. Griffin, burned near Rocky River on the 13th inst., secured only the machinery and a worthless portion of the hull, which was towed into Cleveland a few days ago. It is not probable that any effort will be made to raise the lumber barge General Burnside, sunk off Cleveland piers on Saturday last. Although the boat received some repairs last winter, she was very old and was not worth more than \$2,000. The cargo of coal was insured but there was no insurance on the hull.

Two Canadian schooners caught out in last Friday's gale are ashore and will probably prove a total loss. The Gulnair,

laden with 400 tons of stone and 225 tons of coal, and bound from Cleveland to Hamilton, went on the beach near Ashtabula. The Gulnair, owned by Thomas Myles & Sons, of Hamilton, was an old boat, and was not valued at more than \$5,000. The schooner Lady Macdonald was sunk at Fair Haven.

### Notices to Mariners.

The light-ship on Eleven-Foot shoal, entrance to Green bay, established through subscription from masters of vessels engaged in the Escanaba ore trade, is just south of the shoal and has already proven a great assistance to navigation. Some difficulty may be found in securing men to stay aboard the vessel late in the fall, but for the present competent keepers are engaged. In thick weather the boat will sound a steam whistle that will be readily distinguished from the whistles of steamboats.

The Canadian government gives notice that the back range light at Corunna, River St. Clair, was burned down recently. Until a new tower can be erected a temporary light will be shown from a lantern hoisted on a pole 40 feet high.

### Congressional Inquiry.

During the congressional recess the house committee on foreign affairs intends to take up the question of Canadian canal discrimination, in accordance with President Harrison's recent message on the subject. The committee will take as a basis of consideration of the question the bill introduced by Representative Curtis of New York providing that, with the view of securing reciprocal advantages for ports and citizens of the United States, it shall be the duty of the President, whenever he is satisfied that the passage through any canal or lock connected with the navigation of the St. Lawrence river, the great lakes or connecting waterways is prohibited or made burdensome by the imposition of tolls, to suspend the right of free passage through the St. Mary's Falls canal to Canadian vessels and to levy upon them tolls not in excess of \$2 per ton and \$5 per passage. A sub-committee consisting of Messrs. Blount, Hitt and Chipman is also considering the advisability of charging tolls at St. Clair flats canal.

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President.

E. T. CARRINGTON,  
Vice-President.

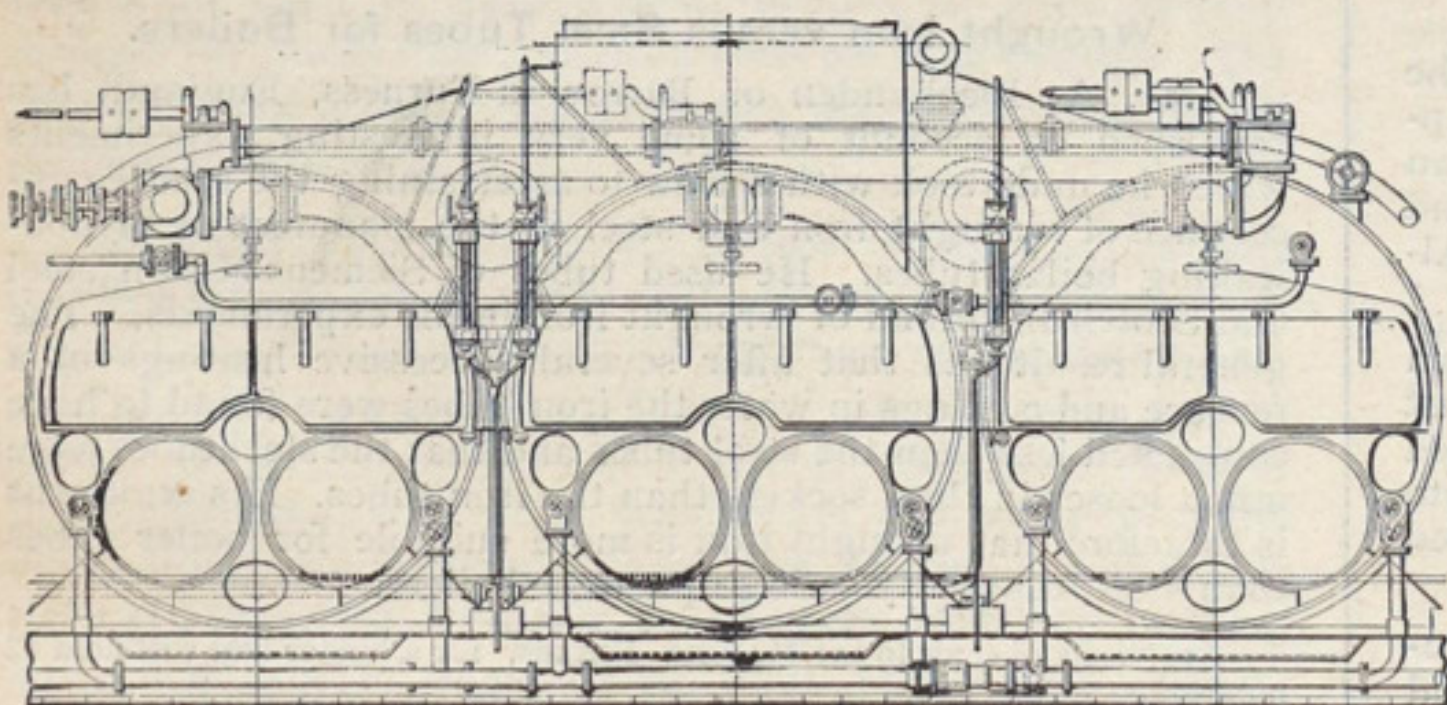
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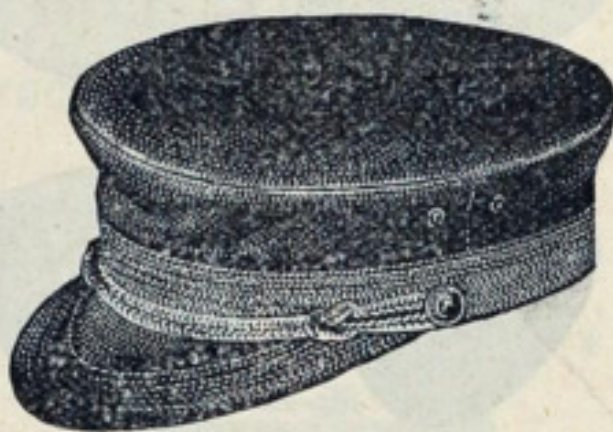
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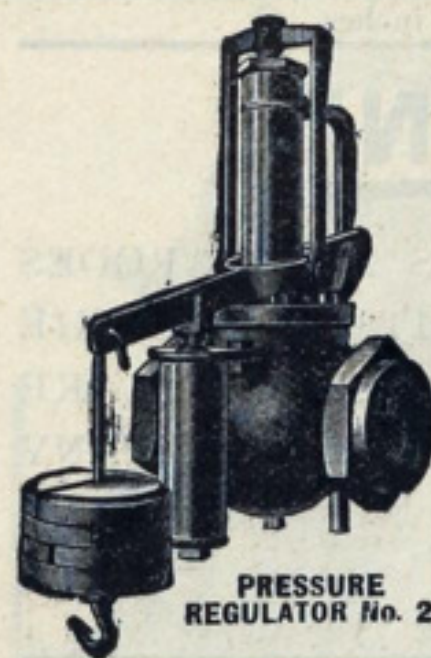
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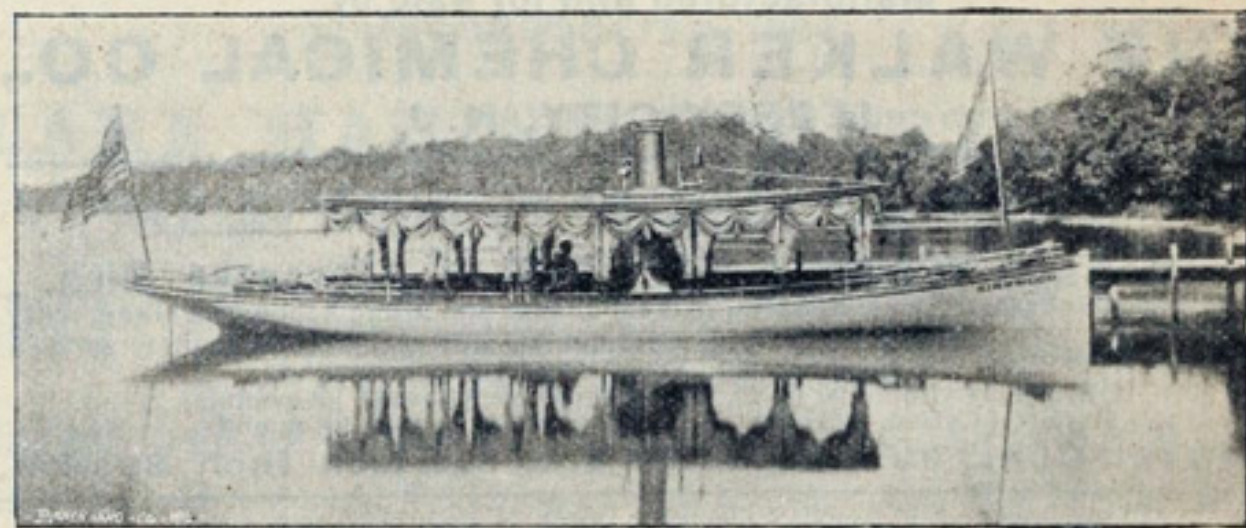
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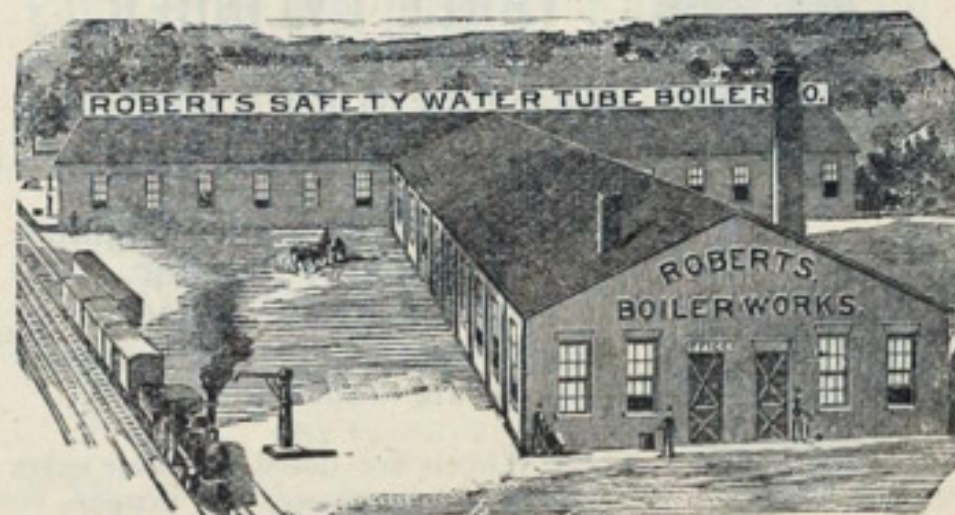


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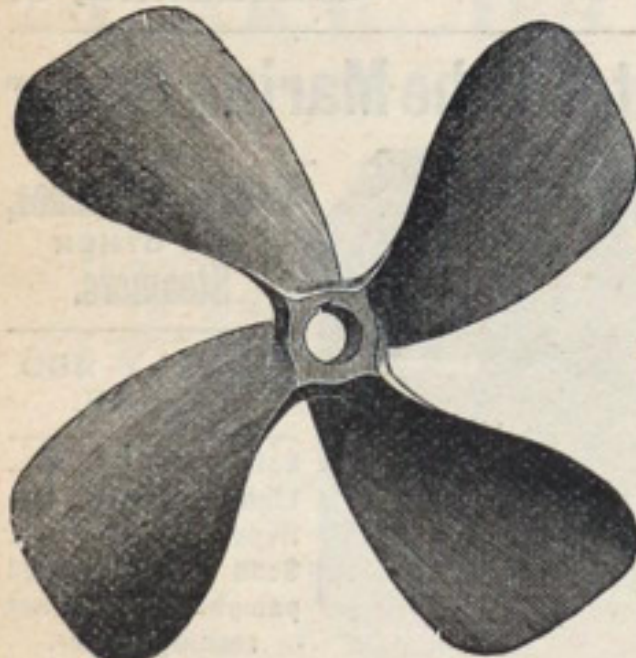
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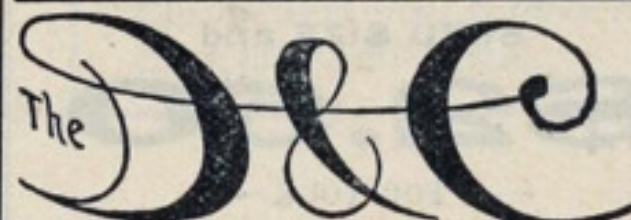
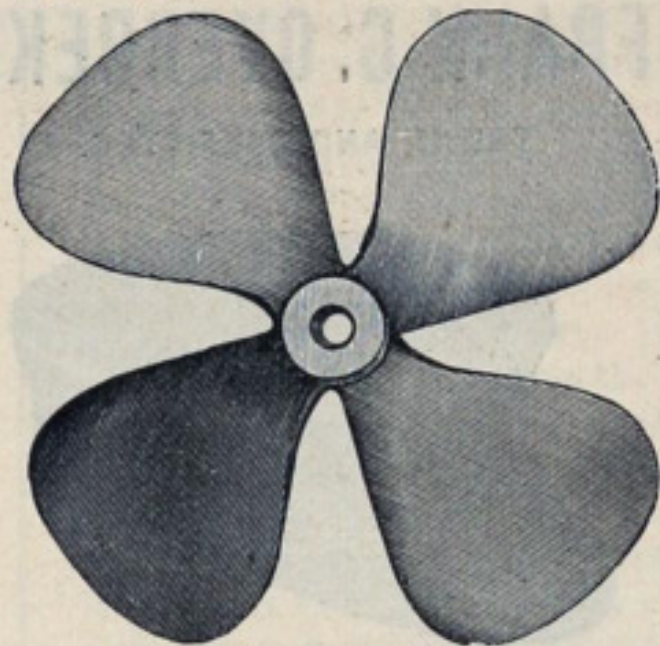
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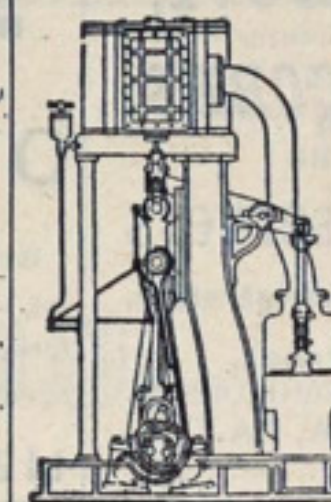
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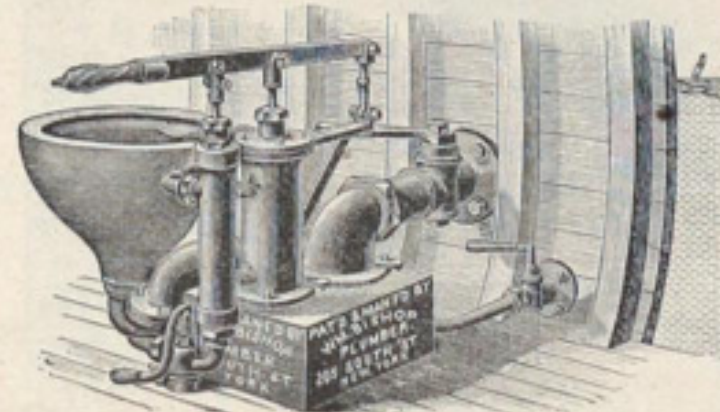
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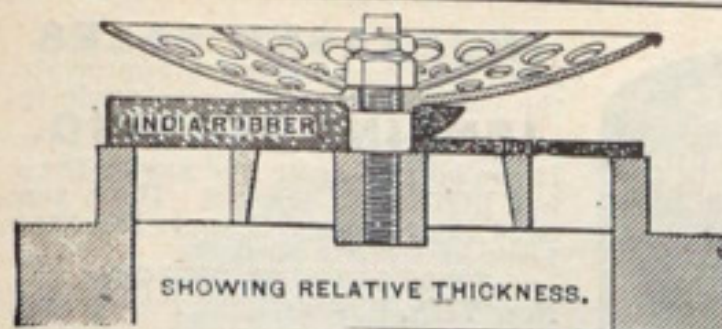


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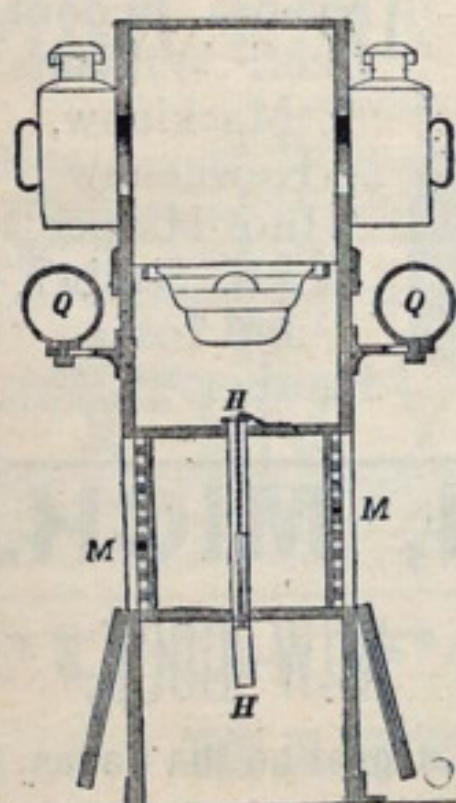
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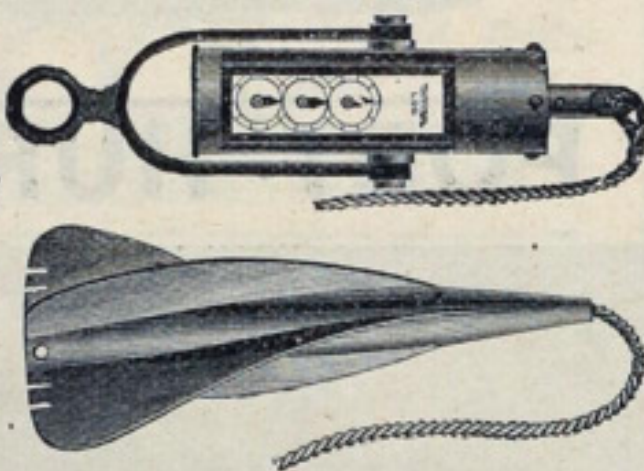
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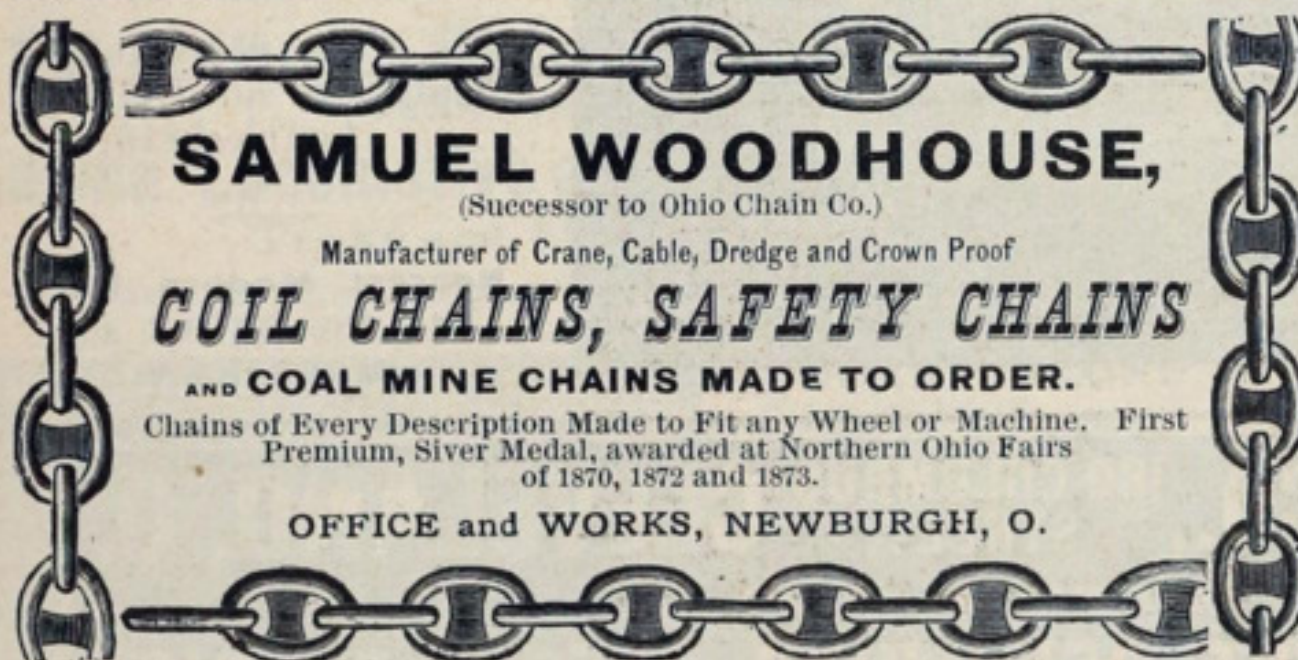


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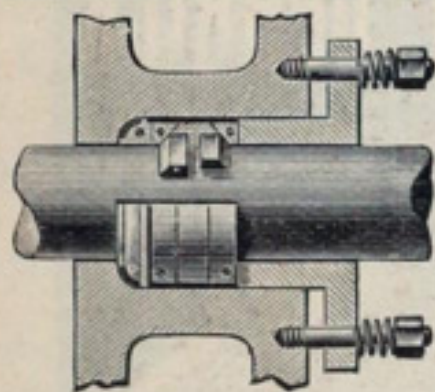
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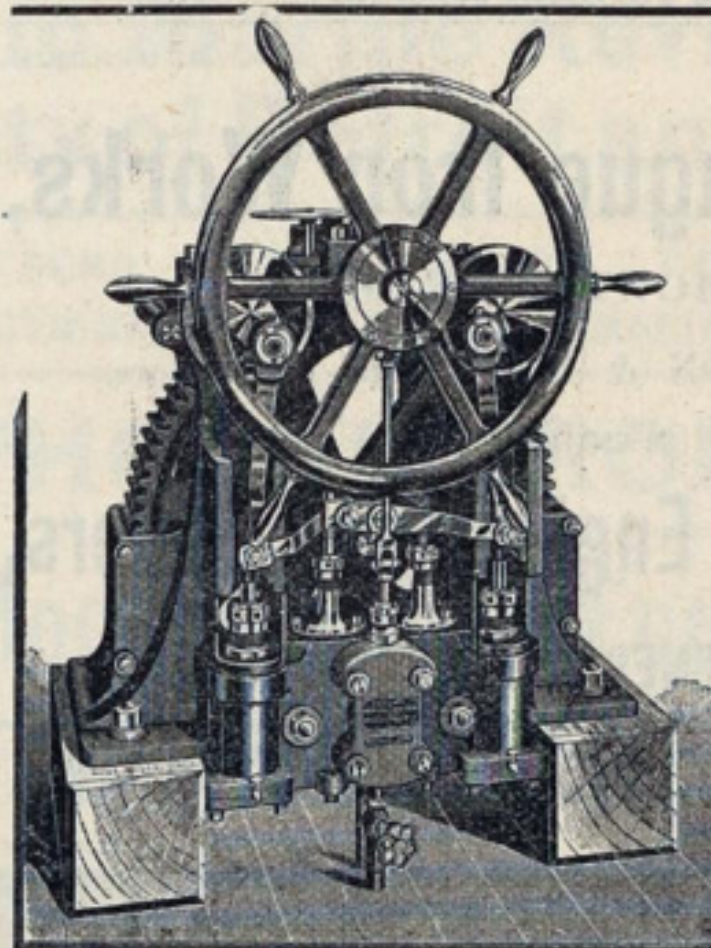
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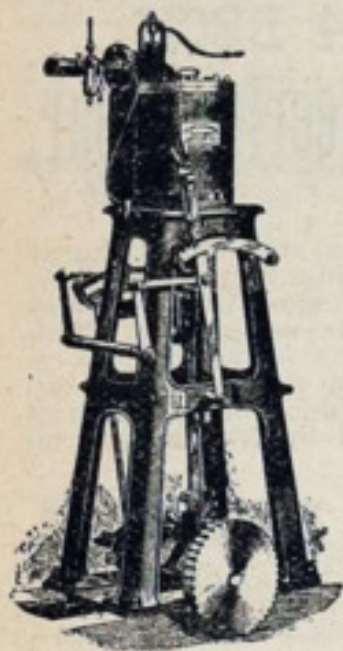
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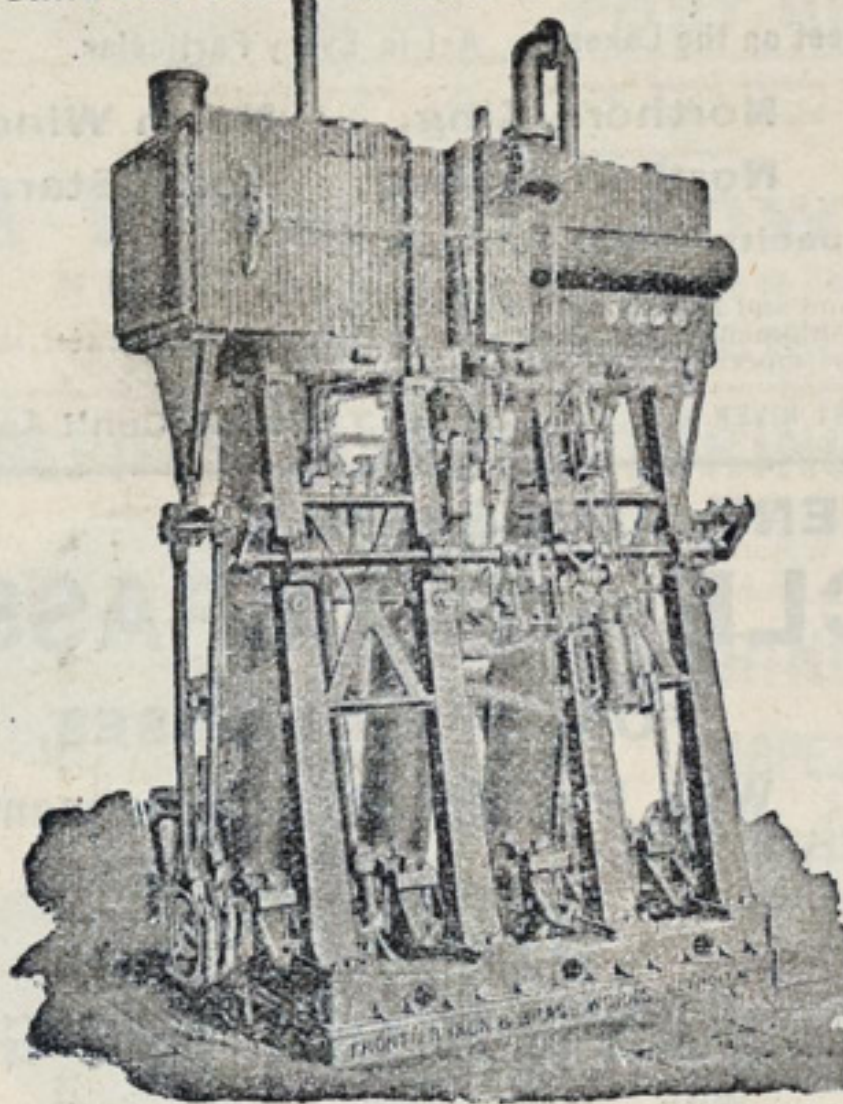
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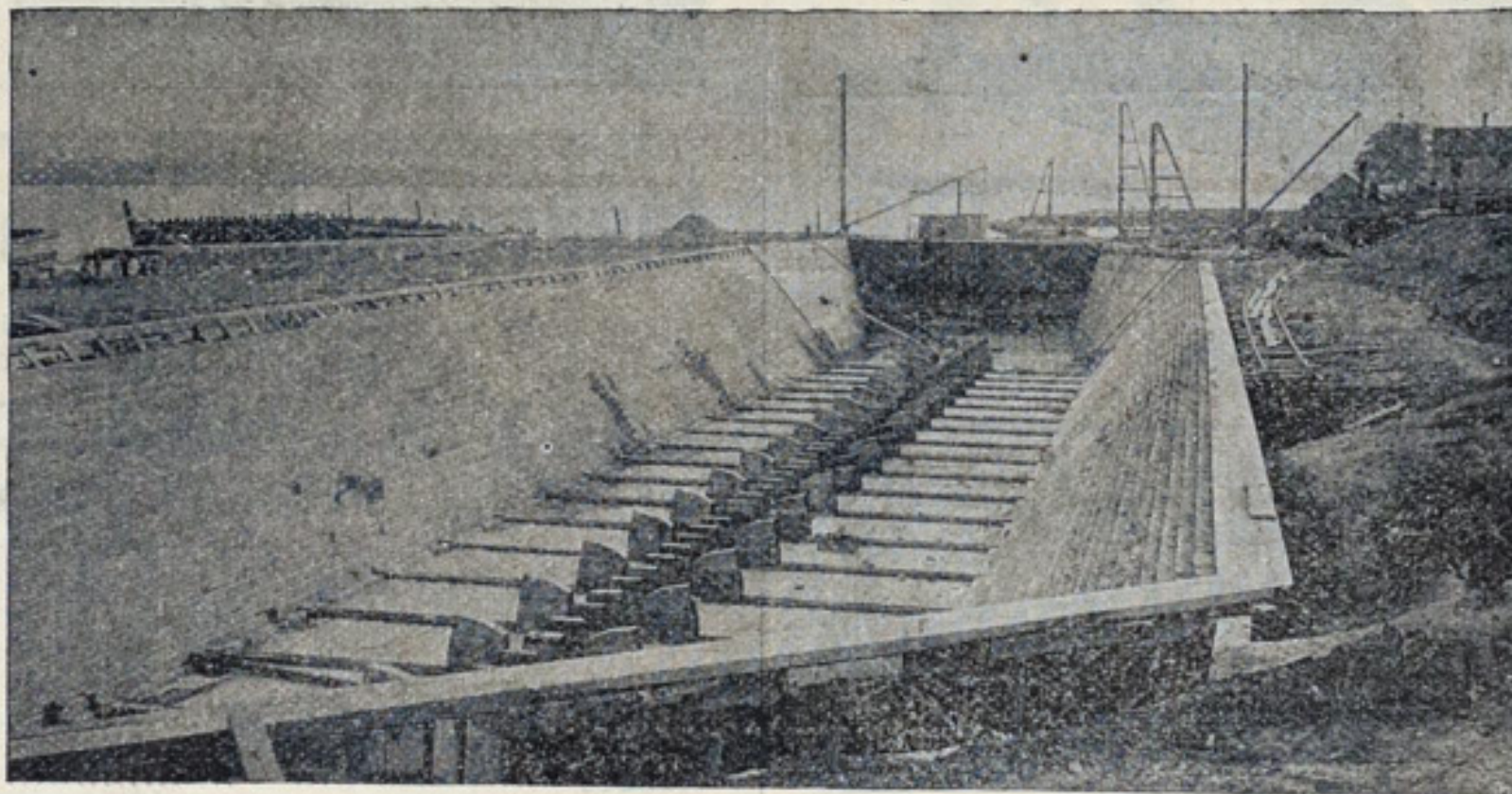
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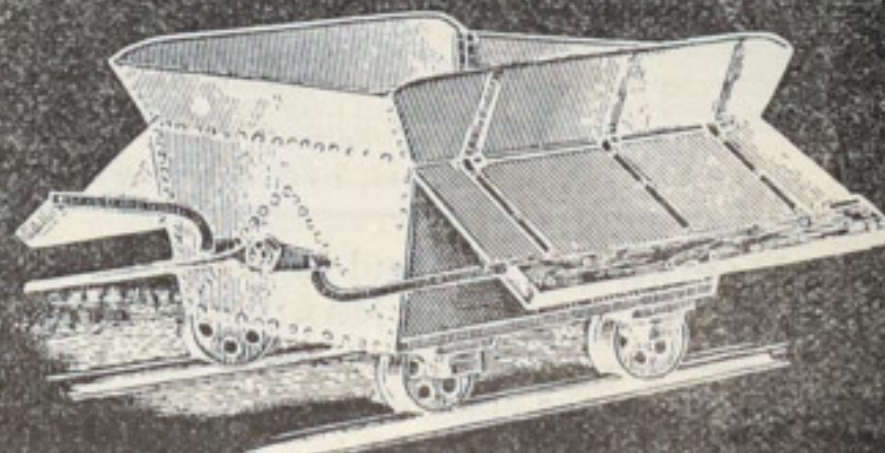
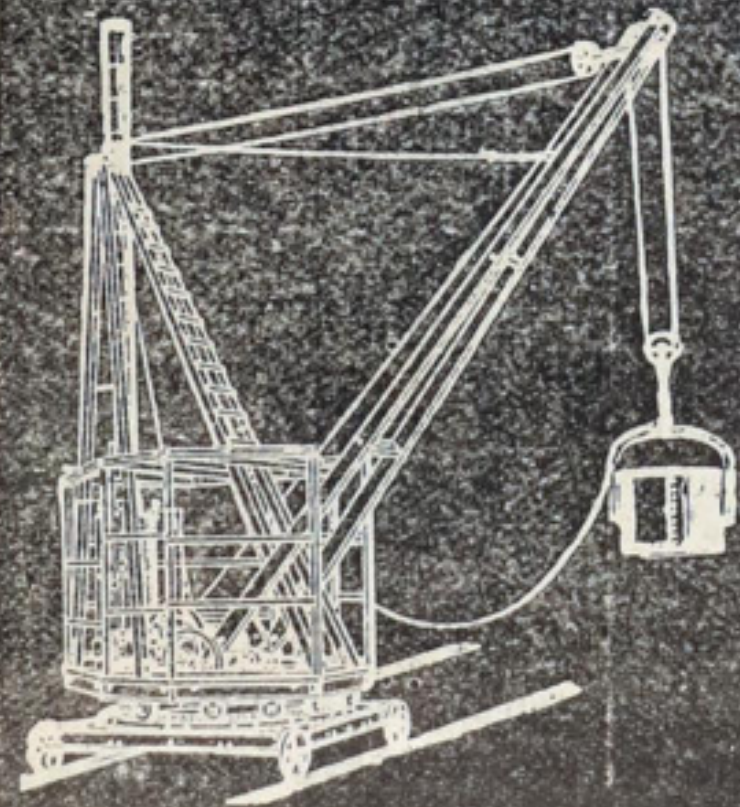
T. W. Palmer,  
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Majestic, Tampa,  
John Mitchell,  
Nyanza, Fedora,  
Geo. F. Williams,  
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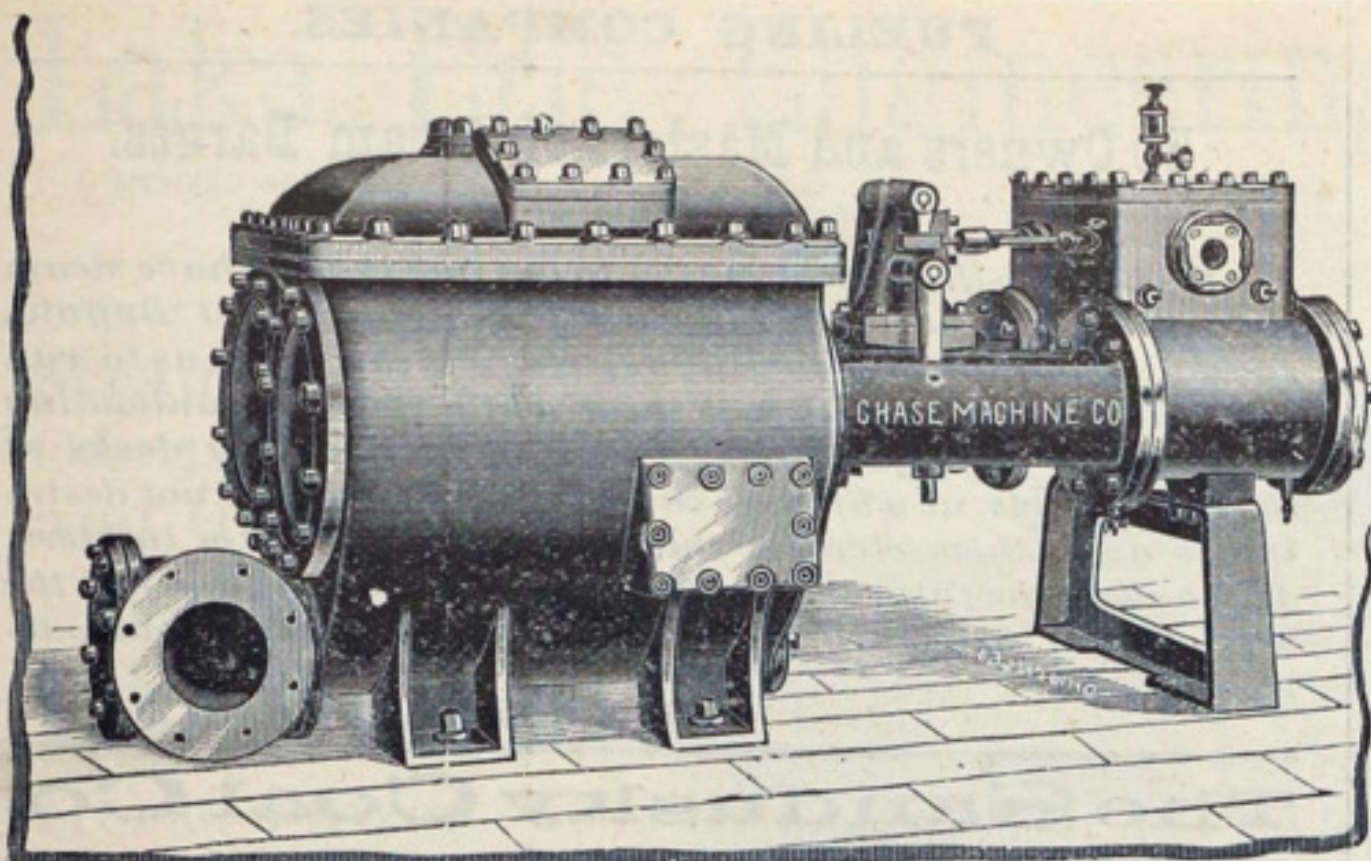
Length: 400 feet.

Width: { on top 95 feet.  
bottom 55 "  
at gate 62 "Depth: { to floor 20 feet.  
to sill 18 "  
on blocks 16 "Nearest Modern Dock  
to the SAULT or  
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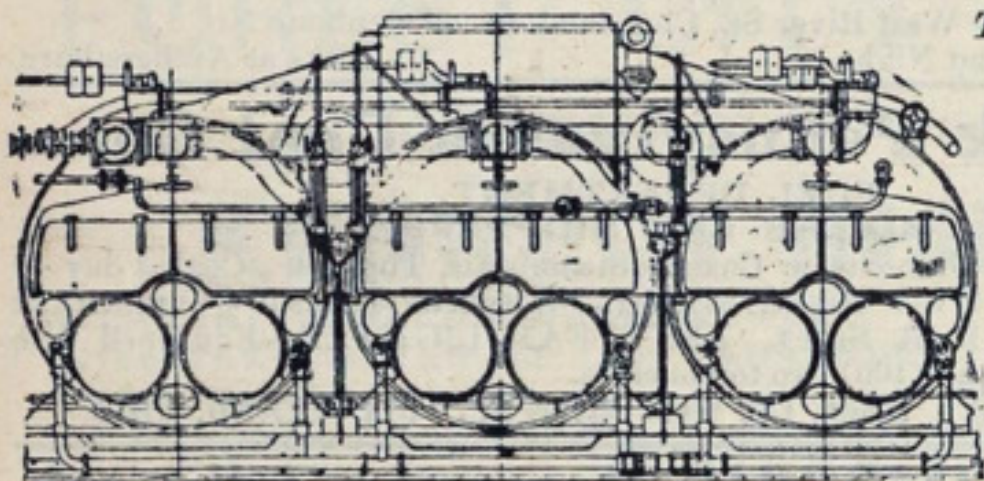


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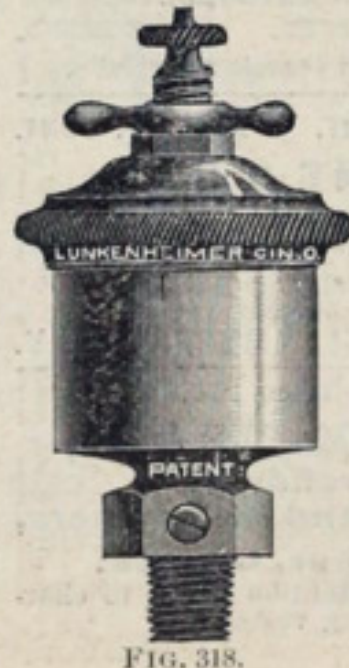


FIG. 318.

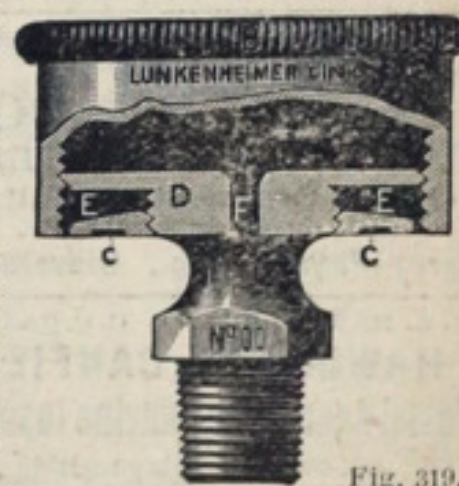


Fig. 319.

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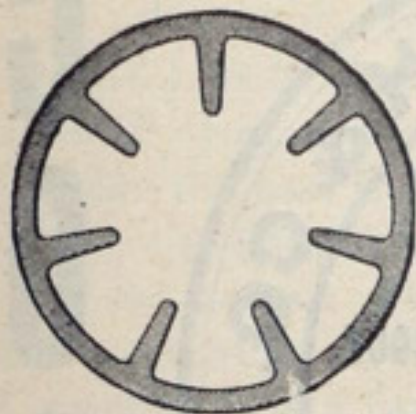
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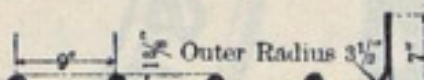
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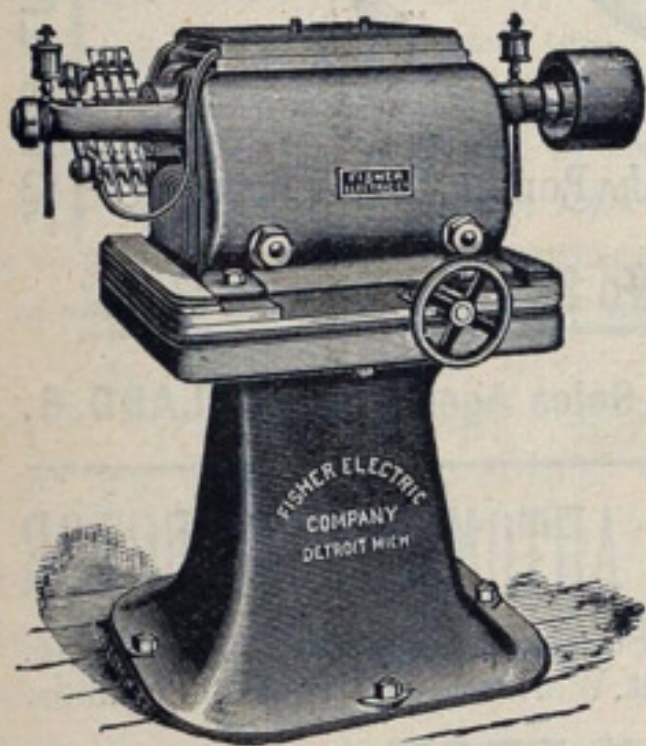
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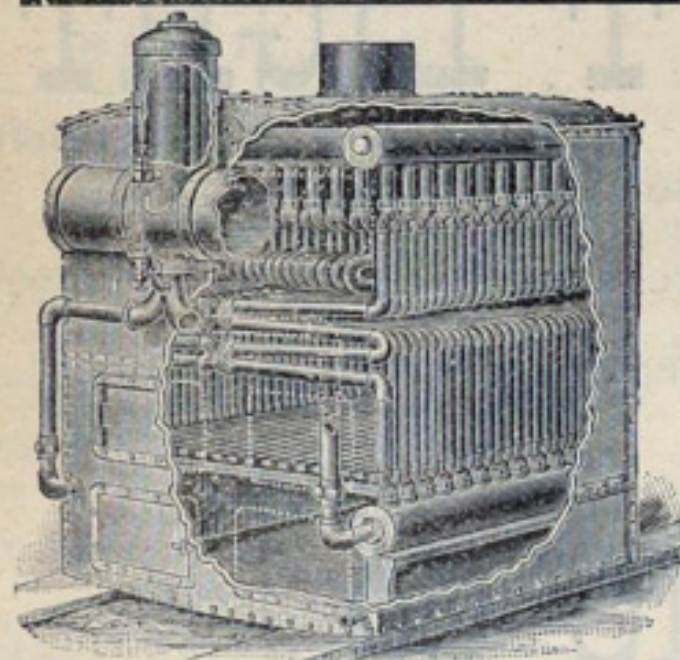
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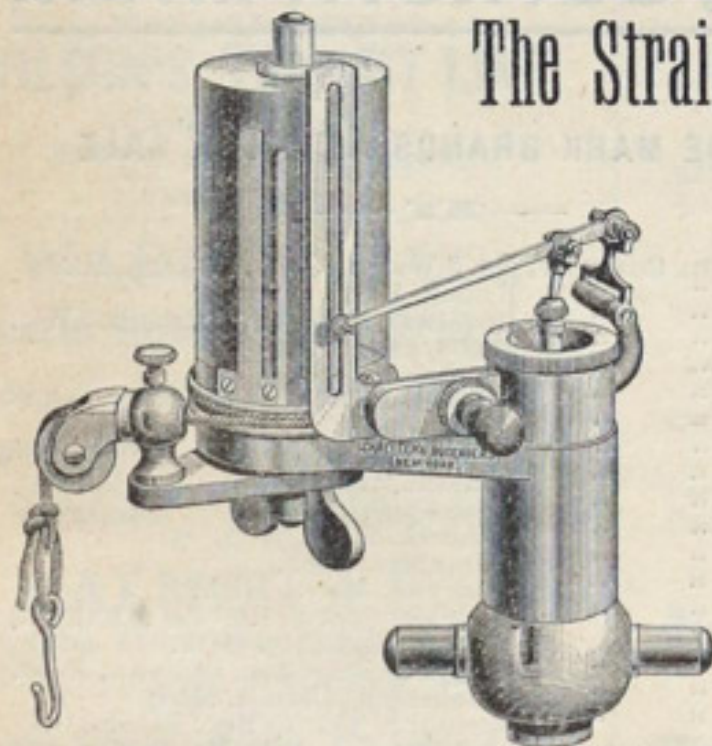
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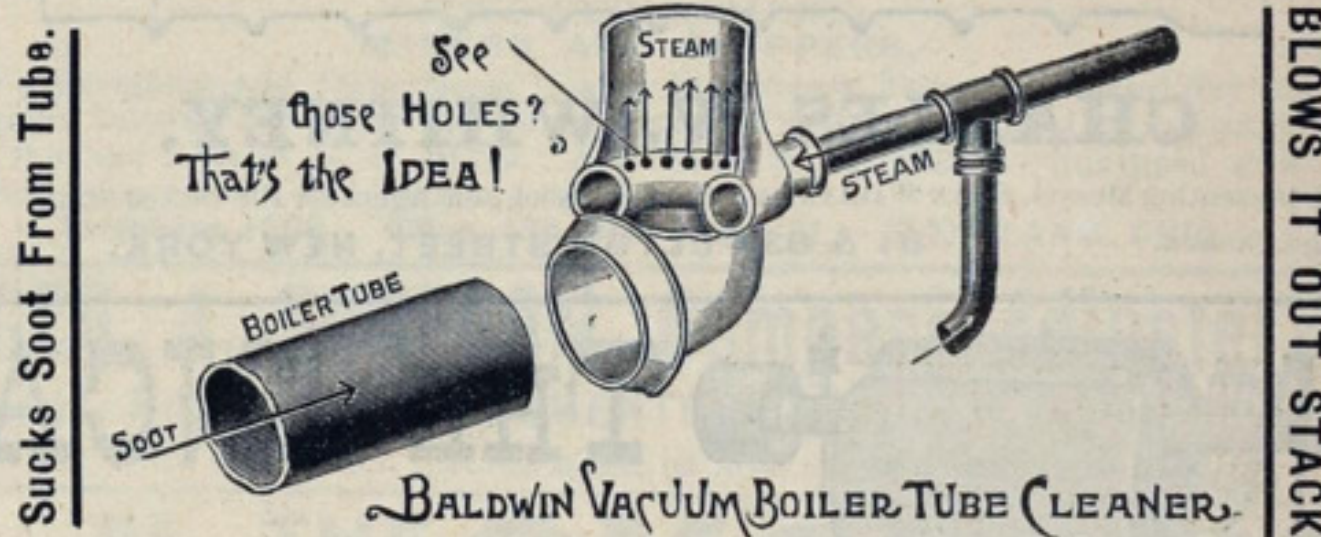
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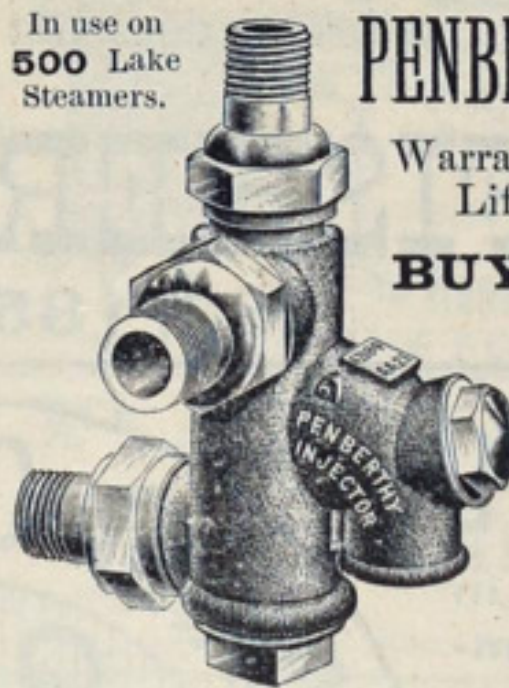
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